

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of : **Confirmation No. 4110**
Yukio KADOMOTO et al. : Attorney Docket No. 2005_1954A
Serial No.10/563,366 : Group Art Unit 3676
Filed March 20, 2006 : Examiner Brad Harcourt
REMOTE OPERATION WIRE
LINE CORE SAMPLING DEVICE : **Mail Stop: AF**

APPELLANTS' BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following is an Appeal Brief submitted in accordance with the provisions of 37 CFR §41.37.

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A. Real Party in Interest

The above-referenced application is assigned to (1) Mitsui Engineering & Shipbuilding Co., Ltd. of Tokyo, Japan, (2) K. Maikai Co., Ltd. of Tokyo, Japan, and (3) Toho Chikakoki Co., Ltd. of Fukuoka, Japan (Reel/Frame: 017724/0648). Therefore, the real parties of interest are (1) Mitsui Engineering & Shipbuilding Co., Ltd., (2) K. Maikai Co., Ltd., and (3) Toho Chikakoki Co., Ltd.

B. Related Appeals and Interferences

There are no known related appeals or interferences.

C. Status of Claims

Claims 1 and 2 have been cancelled; and claims 3-6 are presently pending. All of pending claims 3-6 were finally rejected in the Office Action of December 30, 2008, and the rejection of those claims is appealed. A complete copy of the claims on appeal is provided in Appendix I.

D. Status of Amendments

No amendments subsequent to the final rejection of December 30, 2008 have been made.

E. Summary of the Claimed Subject Matter

A description of the subject matter recited in the rejected claims will now be provided below with reference to the written description and the drawings of this application. In this regard, the cited portions of the written description refer to the clean version of the substitute specification filed on April 1, 2008.

The present invention, as recited in independent claim 3, is directed to a remote operation wire line core sampling device (*see, for example*, page 11, lines 21 and 22) comprising:

a water swivel assembly (*see, for example*, page 11, lines 21 and 22 and Figure 1);

a drill rod coaxially connected to said water swivel assembly (*see, for example*, page 6, lines 5-14 and page 12, line 18 – page 13, line 2);

a wire line core barrel coaxially connected to a lower end of said drill rod and having at a forward end a bit for annularly digging ground (*see, for example*, page 6, lines 5-14, page 11, lines 1-10 and Figure 3);

an inner tube assembly detachably set in said wire line core barrel (*see, for example*, page 6, lines 5-14, page 11, lines 13-17 and Figure 4); and

an over-shot assembly for grasping an upper end portion of said inner tube assembly (*see, for example*, page 12, lines 1-12 and Figure 1),

wherein said water swivel assembly includes an upper water input port at an upper position of said water swivel assembly, said upper water input port adapted to allow pressurized fluid into said water swivel assembly, and a lower water input port at a lower position of said water swivel assembly, said lower water input port adapted to allow pressurized fluid into said water swivel assembly (*see, for example*, page 12, lines 1-12 and Figures 1 and 2B), and

wherein said water swivel assembly accommodates said over-shot assembly at an intermediate position thereof between said upper water input port and said lower water input port such that the pressurized fluid is supplied from said upper water input port to lower said over-shot assembly through said drill rod to an upper end of said inner tube assembly (*see, for example*, page 11, lines 13-17, page 12, lines 1-12 and Figures 1 and 4).

F. Grounds of Rejection to be Reviewed on Appeal

I. Whether claims 3-6 are unpatentable under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,120,282 (*hereinafter* the Pickard reference) in view of U.S. Patent No. 1,499,024 (*hereinafter* the Miller reference).

G. Arguments

I. Independent Claim 3 and the Claims that Depend Therefrom are Patentable over the Combination of the Pickard Reference and the Miller Reference

As set forth by the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.* (*hereinafter KSR*), the key to supporting any rejection under 35 U.S.C. §103(a) is the clear articulation of the reason(s) why the claimed invention would have been obvious. See 550 U.S. 398, ___, 82 USPQ2d 1385, 1396 (2007). However, the Federal Circuit's indication in *In re Gordon* that if, in order to meet the limitations of a claim, a device in a prior art patent would have to be modified in a manner as to render it inoperable for its intended purpose, then in effect, that patent teaches away from the proposed modification, must also be taken into consideration when making any obviousness rejection. See 733 F.2d 900, 902, 221 USPQ 1125, 1127 (1984).

Regarding claim 3, it is patentable over the combination of the Pickard reference and the Miller reference because claim 3 recites a remote operation wire line core sampling device including, in part, an over-shot assembly for grasping an upper end portion of an inner tube assembly, wherein a water swivel assembly accommodates the over-shot assembly at an intermediate position thereof between an upper water input port and a lower water input port such that pressurized fluid is supplied from the upper water input port to lower the over-shot assembly through a drill rod to an upper end of the inner tube assembly. The combination of Pickard reference and the Miller reference fails to disclose or suggest the over-shot assembly of claim 3.

Regarding the Pickard reference, it discloses a drilling apparatus including an overshot assembly 125 and a water swivel 20. The water swivel 20 has an end portion 21 that is connected to a threaded female end 18 of a drill stem 10 and another end portion (opposite to the end portion 21) that is connected to a hydraulic pump 25 via a pipe 22, a T-joint 23, and a pipe 24. (See column 5, lines 12-35 and Figures 1 and 2).

During operation of the drilling apparatus, when it is desired to retract a core barrel inner tube assembly from the bit end of the drill stem 10, the overshot assembly 125 is inserted into the drill stem 10. Then, the hydraulic pump 25 is activated to pump fluid into the drill stem 10 via the pipe 24, the T-joint 23, the pipe 22 and though the water swivel 20 (the fluid flowing from the other end portion to the end portion 21 in the water swivel 20) to propel the overshot assembly 125 in a direction 153. (See column 11, line 63 – column 12, line 12 and Figure 15).

Based on the above discussion and as admitted in the rejection, it is clear that the water swivel 20 has only one fluid input port (i.e., the other end portion) that is adapted to allow pressurized fluid into the water swivel 20. The end portion 21 is clearly adapted only to allow pressurized fluid to output the water swivel 20 into the drill stem 10. Therefore, the water swivel 20 does not have both an upper water input port at an upper position of the water swivel assembly and a lower water input port at a lower position of the water swivel assembly, whereby the over-shot assembly 125 is at an intermediate position thereof between the upper water input port and the lower water input port.

In light of the Pickard reference's failure to disclose both upper and lower water input ports with an over-shot assembly in between, the Miller reference is relied upon as teaching these features. The Miller reference discloses a water swivel 34 having a pipe 36 attached thereto that is connected to a slush pump. The water swivel 34 also has a branch 39 for discharging any waste water which is forced through an opening 38 during the operation of the slush pump. (*See* page 2 of the description, lines 48-65 and Figure 2).

In the rejection, the pipe 36 and the branch 39 of the Miller reference are relied upon as corresponding to the claimed upper and lower water ports. However, it is clear from the description that the branch 39 is not an input port, since it is explicitly disclosed in the Miller reference as being for discharging waste water.

Also, modifying the water swivel 20 of the Pickard reference with the water swivel 34 of the Miller reference still fails to result in the disclosure or suggestion of the claimed position of the over-shot assembly. As discussed above, the branch 39 of the water swivel 34 of the Miller reference is a safety device to discharge waste water during operation of the slush pump. Therefore, modifying the water swivel 20 of the Pickard reference based on the water swivel 34 of the Miller reference would result in two water ports being located on one side of the overshot assembly 125. It is clear that such a modification still fails to disclose or suggest the claimed feature of the over-shot assembly being between the water input ports.

Further, it is noted that the Advisory Action dated March 23, 2009 states that "Miller discloses upper and lower water ports 36 and 39 that are capable of accommodating an overshot assembly between them, even though it is not explicitly disclosed as such." However, it is clear that such a modification of the device disclosed in the Miller reference would prevent the device from operating as intended.

As illustrated in Figure 2 of the Miller reference, the pipe 36 and the branch 39 are connected by way of a narrow connection 37. Also, as stated in page 2 of the description at lines 66-70, it is clear that the purpose of the connection 37 and the branch 39 is to discharge waste water whenever there is a danger of the drilling stem freezing or sticking. Despite the indication otherwise in the Advisory Action, it would not have been obvious to somehow modify the water swivel 34 of the Miller reference to position the overshot assembly 125 of the Pickard reference in the connection 37 between the pipe 36 and the branch 39 because the connection 37 is too narrow and because the connection 37 in conjunction with the branch 39 are specifically designed to allow waste water to escape during the operation of the slush pump. Regarding this, if the overshot assembly 125 of the Pickard reference was somehow placed in the connection 37 of the Miller reference, it is clear that the overshot assembly 125 would form a blockage in the connection 37 and would prevent the waste water from escaping from the branch 39. Therefore, even if it was somehow possible to fit the overshot assembly 125 in the narrow connection 37, such a modification would render the connection 37 and the branch 39 inoperable for their intended purpose of allowing waste water to escape to prevent freezing or sticking of the drilling stem. As a result, such a combination would not have been obvious to one of ordinary skill in the art under *In re Gordon*.

Based on the above discussion, it is clear that the combination of the Pickard reference and the Miller reference fails to meet all of the limitations of claim 3. As a result, claim 3 and the claims that depend therefrom are patentable over the combination of the Pickard reference and the Miller reference.

H. Conclusion

In view of the above, it is respectfully submitted that independent claim 3 and the claims that depend therefrom are not rendered obvious by the combination of the Pickard reference and the Miler reference. Therefore, rejected claims 3-6 are allowable. Accordingly, the Board is requested to reverse the rejections set forth in the final Office Action of December 30, 2008.

This brief is submitted with the requisite fee of \$540.00.

Respectfully submitted,

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APPENDIX I - Claims on Appeal

3. A remote operation wire line core sampling device comprising:

a water swivel assembly;

a drill rod coaxially connected to said water swivel assembly;

a wire line core barrel coaxially connected to a lower end of said drill rod and having at a forward end a bit for annularly digging ground;

an inner tube assembly detachably set in said wire line core barrel; and

an over-shot assembly for grasping an upper end portion of said inner tube assembly,

wherein said water swivel assembly includes an upper water input port at an upper position of said water swivel assembly, said upper water input port adapted to allow pressurized fluid into said water swivel assembly, and a lower water input port at a lower position of said water swivel assembly, said lower water input port adapted to allow pressurized fluid into said water swivel assembly, and

wherein said water swivel assembly accommodates said over-shot assembly at an intermediate position thereof between said upper water input port and said lower water input port such that the pressurized fluid is supplied from said upper water input port to lower said over-shot assembly through said drill rod to an upper end of said inner tube assembly.

4. The remote operation wire line core sampling device according to claim 3, further comprising:

a drill head portion of a sea-bottom core drill;

a chuck rotatably mounted to said drill head portion for grasping said drill rod; and

a mechanism for lifting said drill head portion, while said drill rod is retained in a hole, for extracting said inner tube assembly from said drill rod,

wherein the over-shot assembly is for raising said inner tube assembly through said drill rod.

5. The remote operation wire line core sampling device according to claim 3, wherein said upper water input port and said lower water input port are located in a side wall of said water swivel assembly.

6. The remote operation wire line core sampling device according to claim 3, wherein
said water swivel assembly has a hollow region passing therein in a first direction; and
said upper water input port and said lower water input port are positioned in a second
direction that is perpendicular to the first direction.

APPENDIX II - Evidence

There is no evidence relied on by Appellant.

APPENDIX III - Related Proceedings

As indicated above, there are no related appeals or interferences.